

## REMARKS

Claims 2-7, 10, and 19 have been canceled, Claims 24-31 have been added. Support for the hybridization conditions set forth in new Claims 29-31 is found in the specification in Example 4. No new matter has been entered by these amendments. In view of the foregoing claim amendments and the arguments that follow, applicants submit that all of the pending claims are in condition for allowance.

### Objection to Claims 1, 8-10 and 20-21 for Being Drawn to Non-Elected Products

Applicants submit that the Examiner's objection is moot in view of the foregoing claim amendments.

### Rejection of Claim 10 Under 35 USC § 112, First Paragraph

Claim 10 has been canceled.

### Rejection of Claim 10 Under 35 USC § 102(b)

Claim 10 has been canceled.

### Rejection of Claims 1-2, 6-10, 18, and 20-21 Under 35 USC § 102(b) as Being Allegedly Anticipated by Davin et al. (*Anais da Academia Brasileira de Ciências* 67(3):363-378, 1995)

Claims 2, 6, 7, and 10 have been canceled. The Examiner characterizes the Davin et al. publication as teaching that a secoisolariciresinol dehydrogenase has been purified, and that cloning of this gene has been undertaken. In particular, the Examiner refers to the abstract of the Davin et al. publication.

As explained more fully below, applicants respectfully submit that the Davin et al. publication does not teach that a secoisolariciresinol dehydrogenase has been purified, or the cloning of this gene has been undertaken. The Davin et al. publication teaches that a (+)-pinoresinol/(+)-lariciresinol reductase has been purified and that cloning of this gene had been undertaken.

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Lignans are a structurally diverse group of plant natural products that are made from various simple phenyl compounds called phenylpropanoids. The phenylpropanoids are modified and linked to form a wide range of oligomeric lignans, which, in turn, are linked to yield the complex lignin biopolymers.

The structurally diverse lignans can be classified according to the location of the linkage of the subunits from which they are constructed. Lignans are typically classified as one of the following linkage groups: 8-8', 8-1', 8-5', 8-0-4', 5-5', 3-0-4', 7-1', 8-7', 1-5', and 2-0-3'.

The 8-8' linked lignan pinoresinol, is a central intermediate in lignan metabolism. FIGURE 1, attached hereto as Attachment A, shows the biosynthesis of (+)-pinoresinol, and its conversion to some other important lignans. In particular, FIGURE 1 shows the conversion of (+)-pinoresinol to (+)-lariciresinol and then to (-)-secoisolariciresinol. Both of these reactions are catalyzed by the enzyme (+)-pinoresinol/(+)-lariciresinol reductase, which is the enzyme referred to in the abstract of the Davin et al. publication.

The present patent application is directed to secoisolariciresinol dehydrogenase which converts (-)-secoisolariciresinol to (-)-matairesinol as shown in FIGURE 1. The Davin et al. publication does not disclose an isolation, characterization, or cloning of secoisolariciresinol dehydrogenase.

Thus, applicants submit that the subject matter defined by the pending claims is neither anticipated, nor rendered obvious, by the teachings of the Davin et al. publication.

CONCLUSIONS

In view of the foregoing claim amendments and arguments, applicants respectfully submit that all of the pending claims are in condition for allowance. Reconsideration and favorable action are requested.

Respectfully submitted,

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